

**THE PRACTICE OF TOTAL QUALITY MANAGEMENT (TQM) AND QUALITY
MANAGEMENT INFORMATION (QMI) ON OPERATIONAL PERFORMANCE
(SMALL AND MEDIUM ENTERPRISES BATIK CRAFTS IN Semarang)**

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Abstract. The problems faced by batik craftsmen in Semarang are the quality of performance, capacity, and human resources that do not meet the standards, and also the absence of training. Thus, the purpose of this study is to determine the effect of the application of TQM and QMI practices on Operational Kinerja in batik handicraft MSMEs in Semarang. This study used 65 MSMEs as samples obtained through total sampling or census method. Descriptive analysis and Quantitative Analysis are used to test the influence between variables. Data processing using SPSS. The results showed that: Total Quality Management has no effect on firm value. This is evidenced by the tcount value of 1.627 with t table 2.001179 with 0.05 ($1.627 > 2.001179$) which means profitability has a negative and significant effect. And Quality Management Information has an effect on firm value. This is evidenced by the tcount value of 3.849 with a t table of 2.001179 with 0.05 ($3.849 > 2.001179$) which means profitability has a positive and significant effect.

Keywords: Quality Performance; Total Quality Management; Quality Management Information, Semarang Batik Craftsmen, MSMEs

INTRODUCTION

Improving operational performance in an organization requires a management practice that is able to identify changes in the organization's environment, and can respond proactively through continuous improvement. Total Quality Management (TQM) is a technique often used by service and manufacturing organizations to help improve customer satisfaction, worker satisfaction, and productivity (Ibrahim, 2000). Quality improvement is one of the competitive strategies carried out by SMEs (small and medium enterprises). SMEs can improve quality for the better if they are able to apply all the principles in TQM.

The failure of the pattern of economic development that relies on large business conglomerates has encouraged economic planners to shift development efforts to rely on the empowerment of micro, small and medium enterprises (MSMEs). Such is the case with batik MSMEs in Semarang. The results of research by Ariati, et al, (2013) show that the problem that arises in batik MSMEs in Semarang is the difficulty of getting workers who want to work in the Batik field. Based on the research of Ariati, et al (2013), the empowerment strategy of Semarang batik craftsmen performance includes production aspects, distribution aspects, market demand aspects, and socio-cultural aspects, showing the priority scale of alternative

empowerment strategies which include: creating a batik culture for the community (socio-cultural aspects), organizing continuous batik production training (production aspects), and promotional assistance both nationally and internationally (distribution aspects).

In addition to good management, companies must also pay attention to Quality Management Information (QMI). QMI refers to systematically collecting and analyzing through the problem solving stage to identify the most serious problems felt by the company, finding the causes of these problems and providing appropriate solutions to the problems faced (Anh and Matsui 2011). Managers and employees are seen in the QMI process of interaction through the management of information flow and communication, so that the system can function properly so as to produce quality products and services and affect the improvement of maximum business performance. Empirical studies that examine the relationship between TQM and QMI practices and firm performance have been found in the operations management literature.

SMEs (small and medium enterprises) in Indonesia generally include several companies, such as manufacturing, companies, and service companies. As mentioned, SMEs can also absorb labor in Indonesia as stated by the director of Yayasan Ekosistem Lestari (YEL) Sofyan Tan that (96%) of Indonesia's total workforce is absorbed in SMEs. SMEs can produce quality products if they are able to conduct a continuous performance measurement within the SME organization. This performance measurement will help SMEs to achieve a maximum performance target.

For most of the people of Semarang, of course, it is familiar with the place of batik craft center craftsmen in Semarang. It has been many years that people pursue this batik craft. This batik craft SME in Semarang preserves and develops batik crafts made from natural materials such as wax. The problems faced by batik craftsmen in Semarang are the quality of performance, capacity, and human resources that have not met the standards, and also the absence of training.

METHOD

Type of Research

This type of research is quantitative research. Quantitative research is a research method that is inductive, objective and scientific data obtained in the form of numbers (score or value) or statements that are assessed and analyzed by statistical analysis.

Research Variables

The number of variables that will be tested for their relationship and influence in this study consists of 3 (three) variables, namely Total Quality Management (X1), Information Quality Management (X2) and Operating Performance (Y).

Data Analysis Method

1. Descriptive Analysis

Sugiyono (2014), says, descriptive analysis is an analysis that serves to describe or provide an overview of the object under study through objective samples or population data. Descriptive analysis aims to see the character or description of data seen from the minimum, maximum, average (mean), median and standard deviation values of the research variables.

2. Quantitative Analysis

Quantitative analysis is an analysis based on quantitative data to be analyzed to prove the research hypothesis. (Sugiyono, 2014). Quantitative analysis in this study is used to test the effect of TQM practices and quality management information (QMI) on operational performance.

a. Classical Assumption Test

The requirements for the linear regression model test require a classic assumption test. Classical assumptions are requirements that must be met in linear regression analysis. The classic assumption tests commonly used are normality test, multicollinearity test, heteroscedasticity test and auto correlation test. (Ghozali, 2006).

1. Normality Test

The normality test aims to determine whether the dependent and independent variables in the regression model have a normal distribution or not. A good regression model is a regression model that is normally distributed or close to normal (Ghozali, 2016). A simple statistical test can be done by looking at the kurtosis and skewness values of the residuals. The statistical test to test residual normality is the Kolmogorov-Smirnov (K-S) non-parametric statistical test by looking at Kolmogorov-Smirnov, if the significant value is > 0.05 then the data is normally distributed. Conversely, if the significance value is < 0.05 then the data is not normally distributed. In this study using Kolmogorov-Smirnov statistical analysis because it is easier for researchers to test normality and read the results of the test (Ghozali, 2016).

2. Multicollinearity Test

The multicollinearity test is intended to determine whether the regression model has a correlation between the independent variables. The multicollinearity test is carried out by regressing the analysis model and testing the correlation between independent variables using the variance inflation factor (VIF). The basis for making multicollinearity test decisions is:

- a. If the tolerance value > 0.10 and the VIF value < 10 , then the regression model does not occur multicollinearity.
- b. If the tolerance value < 0.10 and the VIF value > 10 , then multicollinearity occurs. The VIF value is obtained by the formula:

$$VIF = \frac{1}{\text{Tolerance}}$$

3. Heteroscedasticity Test

The heteroscedasticity test aims to determine whether in a regression there is an inequality of variance from the residuals of one observation to another. If the variance of the residuals of one observation to another observation is constant, it is said to be homoscedasticity. However, if the variance of the residuals of an observation to another observation is not fixed, it is said to be heteroscedasticity. A good regression model is a regression model with homoscedasticity.

The Glejser test applied in this research model is a heteroscedasticity test method by regressing all dependent variables on the absolute value of the residual as the dependent variable. Decision making is done by looking at the significance value or p-value, where if Sig.

> 0.05 then there is no heteroscedasticity but if Sig. < 0.05 then heteroscedasticity occurs (Nachrowi, 2008).

3. Multiple Regression Analysis

So that the general formula for Multiple Regression in this study is as follows:

$$Y = \alpha + \beta_1 TQM + \beta_2 QMI + \varepsilon$$

Where,

Y = Operational Performance α = Constant

β_1, β_2 = Regression coefficient

TQM = Total Quality Management

QMI = Quality Management Information

4. Model Analysis

a. Test Together (F Test)

According to Ghozali (2013) the F test is used to show whether all the independent variables included have a simultaneous influence on the dependent variable. The basis for making the f test decision is :

1. If the significance value ≤ 0.05 , the hypothesis is proven (significant regression coefficient). This indicates that the variables of TQM and QMI implementation together have a significant influence on the company's operational performance.
2. If the significance value > 0.05 then the hypothesis is not proven (regression coefficient is not significant). This indicates that the variables of TQM and QMI implementation together do not have a significant influence on the company's operational performance.

b. Coefficient of Determination (Adjusted R Square)

The analysis of the coefficient of determination or (R^2) in this study is intended to determine how much influence the independent variables simultaneously have on the dependent variable. This test aims to determine the percentage of total variation in the dependent variable that is explained by the independent variable. The R^2 value lies between 0 and 1 ($0 \leq R^2 \leq 1$). If R^2 is close to 1, then the independent variables are almost able to provide all the information needed to predict the dependent variable (Ghozali, 2011).

c. Hypothesis Test

Hypothesis testing uses the t test to test the hypothesis which states that the hypothesis is accepted or rejected if the probability of the t value or significance < 0.05, it can be said that there is an influence between the independent variables on the dependent variable partially. Conversely, if the probability of t or significance > 0.05, it can be said that there is no significant influence between each independent variable on the dependent variable. (Ghozali, 2011).

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics in this study are basically a process of transforming research data in tabulated form so that it is easy to understand and interpret.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Total Quality Management	50	12	19	17.16	1.963
Quality Management Information	50	10	20	15.82	2.716
Kinerja Operasi Perusahaan	50	13.00	20.00	17.1200	2.04680
Valid N (listwise)	50				

Quantitative Analysis

1. Classical Assumption Test

a. Normality Test

One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual
N	50
Normal Parameters ^a Mean	.0000000
Std. Deviation	1.57332678
Most Extreme Differences Absolute	.093
Positive	.093
Negative	-.078
Kolmogorov-Smirnov Z	.654
Asymp. Sig. (2-tailed)	.785

a. Test distribution is Normal.

Based on the table above, it can be seen that the Asymp. Sig (2-tailed) on the variable is 0.785, which means the Sig. value is greater than 0.05 (Sig. > 0.05), then variables X1 and X2 are normally distributed. This means that the data is suitable for use in research and can be continued.

b. Multicollinearity Test

Dependent Variable: KINERJA OPERASIONAL PERUSAHAAN

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

1 (Constant)	9.346	1.516		6.166.000	
TOTAL QUALITY MANAGEMENT	.064	.285	.027	.226.822	.8491.178
QUALITY MANAGEMEN INFORMATION	.474	.092	.628	5.165.000	.8491.178

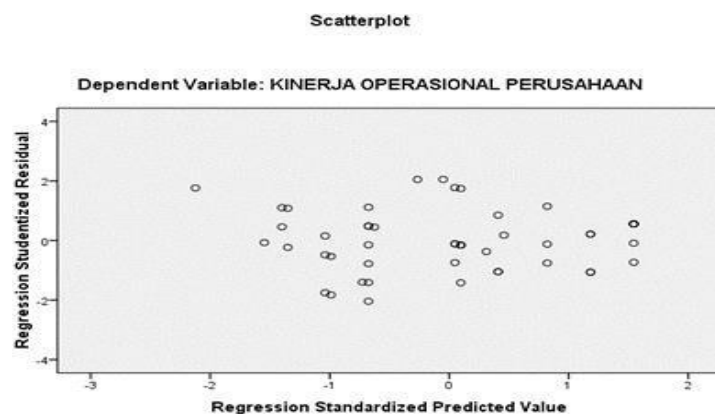
Based on the table above, the tolerance and VIF values are obtained, where it can be seen that the tolerance and VIF numbers on the X1 and X2 variables are 0.894 and 1.178, respectively (VIF value <10), thus it can be concluded that based on the tolerance and VIF numbers, the regression model for the two independent variables does not occur multicollinearity.

c. Heteroscedasticity Test

Coefficients					
		Unstandardized Coefficients	Standard ized Coeffie nts	t	Sig .
Model		B	Std. Error	Beta	
1	(Constant)	7.103	1.978		3.592 .001
	Total Quality Management	.227	.139	.217	1.627 .110
	Quality Management Information	.387	.101	.514	3.849 .000

Dependent Variable: Kinerja Operasi Perusahaan

In the calculation results above, it is known that the significance value of the Total Quality Management variable is more than 0.05 (0.110), while the Quality Management Information variable is less than 0.05, namely 0.000. Based on this, it can be concluded that heteroscedasticity occurs between independent variables in the regression model. Then the above results can be explained by the results of graphical analysis, namely the scatterplot graph, the points formed must spread randomly, spread both above and below the number 0 on the Y axis. If this condition is met, heteroscedasticity does not occur and the regression model is suitable for use. The results of the heteroscedasticity test using the scatterplot graph are shown in Figure 4.2 below:



a) 0 on the Y axis, then there is no heteroscedasticity (V. Wiratna Sujarweni, 2007: 96). By looking at the scatterplot graph above, it can be seen that the points spread randomly, and are spread both above and below the number 0 (zero) on the Y axis. So it can be concluded that there are no symptoms of heteroscedasticity in the regression model used.

Multiple Linear Analysis

		Coefficients ^a					
		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		Std. Error					
		B	Beta			Tolerance	VIF
1	(Constant)	7.103		3.592	.001		
	Total Quality Management	.227	.217	1.627	.110	.668	1.497
	Quality Management Information	.387	.514	3.849	.000	.668	1.497

a. Dependent Variable: Kinerja Operasi Perusahaan

From the multiple regression equation above, it can be interpreted as follows:

- The constant value in the regression equation above shows a positive value of 7.103 which means that if all independent variables, namely Total Quality Management (x1), and Quality Management Information (x2), are constant (0) or not entered, the Operational Performance will still increase by 7.103%.
- The regression equation model above shows that Total Quality Management (X1) has a positive value of 0.227 which means that if Total Quality Management (X1) increases by 1% then Company Performance (Y) will also increase by 0.227 or 0.227%.
- In the regression equation model above shows that Quality Management Information (X2) has a positive value of 0.387 which means that if Quality Management Information (X2) increases by 1% then Company Performance (Y) will increase by 0.387 or 0.387%.

Model Analysis

1. Test Together (F Test)

ANOVA					
Model		Sum of Squares	df	Mean Square	F Sig.
1	Regression	90.330	2	45.165	18.467 .000 ^a
	Residual	114.950	47	2.446	
	Total	205.280	49		

a. Predictors: (Constant), Quality Management Information, Total Quality Management

b. Dependent Variable: Kinerja Operasional Perusahaan

From the table above, it shows that the Fcount value is greater than the Ftable value, namely $18.467 > 3.19$ and the F significance value is smaller than the level of significance used in the current study, namely $0.000 < 0.05$. This means that the independent variables in the current study, namely variables X1 and X2 together significantly affect the dependent variable, namely Y. So that the model in the current study can be said to be Fit. So that the model in the current study can be said to be Fit.

2. Coefficient of Determination (Adjusted R Square)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.663 ^a	.440	.416	1.564

a. Predictors: (Constant), Quality Management Information, Total Quality Management

b. Dependent Variable: Kinerja Operasi Perusahaan

The above statement is based on the description of the test results in the table above which shows the results of the adjusted R square calculation (adjusted R^2) are 0.416, this means that 41.6% of the Company's operational performance variables can be explained by variations in the two independent variables. While the rest ($100\% - 41.6\% = 58.4\%$) is explained by other causes outside the research model. The R value is 0.663 which means that the correlation or relationship between the dependent and independent variables is close.

3. Hypothesis Test T Test

Coefficients

CONCLUSION

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	7.103	1.978		3.592	.001
	Total Quality Management	.227	.139	.217	1.627	.110
	Quality Management Information	.387	.101	.514	3.849	.000

- 1) Based on hypothesis testing, it is known that Total Quality Management has no effect on firm value. This is evidenced by the tcount value of 1.627 with a t table of 2.001179 with 0.05 ($1.627 < 2.001179$) which means profitability has a negative and significant effect.
- 2) Based on hypothesis testing, it is known that Quality Management Information affects firm value. This is evidenced by the tcount value of 3.849 with a t table of 2.001179 with 0.05 ($3.849 > 2.001179$) which means profitability has a positive and significant effect.

ADVICE

1. Future researchers should develop this research on other businesses besides other small industries, so that differences and similarities with the results of this study can be known.
2. It is necessary to re-examine the variables that can improve the operational performance of small and medium enterprises, so as to make SMEs become stronger and more resilient and able to compete at the national and international levels.

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